

AQ-0007 BMPs Associated with the Windy Shingle Project

Design Elements and BMPs

The following BMPs and design elements are would be implemented to ensure compliance with the regulatory framework for water quality and the aquatics resource and/or to reduce the risk of adverse impacts to the aquatics resource. A description is provided as to when, where and how the design element should be applied and/or what conditions would trigger the need to apply the design element.

Use of BMPs, as found in Rules Pertaining to the Idaho Forest Practices Act, will be applied to prevent non-channelized sediment delivery from harvest units and roads to streams in the project area (Table 2).

Anticipated Effectiveness: Highly effective. BMPs would be followed for the proposed action as stipulated by the Idaho Forest Practices Act. Idaho water quality standards regulate non-point source pollution from timber management and road reconstruction activities through the application of BMPs. The Region 1 and Nez Perce/Clearwater National Forest has an excellent record of successful implementation of effective BMPs (IDEQ 2013 and 2016 Interagency Forest Practices Act Audit). Between 1990 and 2002, the Forest had a BMP implementation rate of 98% and a 97.8% rate of effectiveness (USDA Forest Service, 2003). Survey results from 2004 through 2008 indicate implementation and effectiveness rates of 98% or greater (these reports can be found on the world-wide-web at):

<http://www.fs.usda.gov/detail/nezperceclearwater/landmanagement/planning/?cid=stelprdb5408439>).

The same BMPs would be applied to the Windy Shingle Project and are expected to have similar results. In addition, tree tops and limbs cut from the harvested trees would remain within the unit and would provide downed woody material that would help trap sediment moving downslope.

1. PACFISH default buffers will be used to define vegetation treatment unit boundaries. No harvest will occur within 300 feet of fish-bearing streams, 150 feet of perennial non-fish bearing water, 100 feet of intermittent streams, and 150-foot slope distance from the edge of wetlands, seeps and spring larger than one acre or verified landslide prone areas and 100-foot slope distance from the edge of wetlands, seeps and springs less than one acre or verified landslide prone areas

Anticipated Effectiveness: Highly effective. “Riparian Habitat Conservation Areas are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. Riparian Habitat Conservation Areas include traditional riparian corridors, wetlands, intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems by 1). Influencing the delivery of coarse sediment, organic matter, and woody debris to streams, 2) Providing root strength for channel stability, 3) Shading the stream, and 4) Protecting water quality (Naiman et al. 1992).”

Past monitoring efforts and current literature (Sweeny and Newbold 2014) show that the application of vegetative buffers around aquatic dependent ecosystems are effective at maintaining ecological processes for aquatic ecosystems.

Preliminary monitoring results from the PACFISH/INFISH Biological Opinion (PIBO) monitoring across the Upper Columbia River Basin indicate improving trends in pool depth, bank stability, large wood frequency and volume, and the presence of spawning substrate (<3 inches in diameter) as a result of PACFISH implementation (USDA Forest Service 2009). Significant decreases in the percent of fine substrates in pool tailouts has also been observed in managed watersheds. PIBO results for the Salmon River showed that managed areas had similar habitat complexity as those in unmanaged watersheds (Archer et al, 2016; Meredith, 2013).

Local monitoring of 23 miles of RHCAs and 5.5 miles of temporary road after timber harvest and burning of the units was completed on the Lochsa District in 2014 (USDA Forest Service, unpublished data). There was no evidence of sediment moving from harvest units into RHCAs or sediment moving from temporary roads (with no stream crossings) into harvest units or RHCAs. The thick vegetation that makes up RHCAs acts as an excellent, virtually impenetrable, filtering source for overland sediment flow. Retaining downed woody debris within the harvest units also provides structures that capture sediment and slow or stop its movement down the slope.

Other Required Design Elements and BMPs

Table 3. Project Design elements and/or BMPs for the Protection of Aquatic Species Habitat and Water Quality.

Soil Resources, Water Quality and Fish Habitat Protection	
<u>Harvest Activities</u>	
1.	PACFISH default buffers will be used to define vegetation treatment unit boundaries. No harvest will occur within 300 feet of fish-bearing streams, 150 feet of perennial non-fish bearing water, 100 feet of intermittent streams, and 150-foot slope distance from the edge of wetlands, seeps and spring larger than one acre or verified landslide prone areas and 100-foot slope distance from the edge of wetlands, seeps and springs less than one acre or verified landslide prone;
2.	No ground based skidding would be allowed on slopes over 35%;
3.	Work associated with the proposed action during wet conditions would cease if rutting, erosion, soil displacement damage cannot be controlled. The Sale Administrator will make the determination when condition warrant ceasing operations and/or haul. This standard also applies to winter logging and/or haul as well;
4.	Prior to leaving the site, any rutted areas and other damaged areas would be smoothed, sloped and graded to drain, and all erosion control features required would be constructed as functional. When working adjacent to live water or streams a buffer of vegetation, brush barrier, or straw dike would be maintained to prevent direct sedimentation to the stream;
5.	Tractor crossings over road ditchlines will be limited where possible, by installing temporary culverts or crossing logs. Ditch crossings, cut slopes, and fill slopes will be to standard after harvest. Sediment filtering devices such as straw bales will be used at disturbed ditch sites as needed to reduce erosion and sediment movement until the sites are repaired;

6.	To reduce erosion and maintain soil productivity 7-15 tons per acre of coarse woody debris (greater than or equal to 3 inches in diameter) would be retained following completion of activities. Reference “Coarse Woody Debris, Snag and Green Tree Retention Guidelines” (USDA 2008);
7.	Prior to harvest, skid trails, excavated skid trails, landings, and yarding corridors will be located to minimize the area of detrimental soil effects;
8.	Tractor skid trails will be spaced a minimum of 80 feet apart, except where they converge, and existing skid trails will be reused where practicable;
9.	Excavated skid trails will be recontoured and landings will be decompacted to restore slope hydrology and soil productivity;
10.	Site preparation, fuels treatment, and planting activities would occur within five years following timber harvest in regeneration units;
11.	Landings will be located outside of areas where channelized drainage (i.e., sediment transport) toward RHCAs could occur;
12.	Regeneration and rehabilitation treatment areas will be planted with a silviculturist approved native seedling mix to enhance natural reestablishment of tree stands;
<u>Prescribed Fire</u>	
13.	No prescribed fire ignition would occur on landslide prone areas;
14.	For the harvest units/site prep/fuels management burning ignition will not occur within RHCAs. However Fire may be allowed to creep into RHCAs under burning conditions where high fire severity or tree mortality could be limited and would not to retard the attainment of Riparian Management Objectives (RMO's) or substantial stream side shade;
15.	Guidelines found in NMFS' Anadromous Salmonid Passage Facility Design (NMFS 2011a) will be utilized for all water pumping activities associated with dust abatement and fire safety. A fisheries biologist will inspect all pumping locations;
<u>Temporary Roads</u>	
16.	Temporary roads would be located near ridge tops and/or along routes with no intermittent or perennial stream crossings;
17.	Following use, temporary roads will be obliterated within three years which would include decompaction, recontouring, and covering the soil with slash/organic debris cover;
18.	If roads are to be overwintered, they would be water-barred and placed into a hydrologically stable condition to minimize surface erosion potential;
<u>Haul, Road Maintenance and Improvements</u>	
19.	Haul routes would be maintained to BMP standards and would meet or exceed Idaho Forest Practices Act standards, including proper drainage, adequate stream culvert capacity, cleared and functional cross-drains;

20.	Roads that would be used for log hauling would receive maintenance or improvement treatments before haul begins;
21.	Prior to the start of the proposed road work and vegetation treatments and subsequent haul, additional or replacement crossdrains and/or rolling dips may be installed where direct road runoff and sediment could be directed to the forest floor, away from stream courses, which would minimize the potential for haul road contributing runoff and sediment to streams at stream crossings;
22.	When/if adding crossdrains (Culvert, waterbar, rolling dip, etc.) they would be spaced at approximately 100-200 feet on either side of stream crossings or where appropriate to best reduce potential for sedimentation;
23.	Roadside drainage ditches will only receive maintenance where needed to ensure proper drainage. Sediment filtering devices (e.g., wattles, weed-free straw bales, filter fences, etc.) will be used as needed to limit erosion and delivery of sediment from roads into streams;
24.	Culvert replacements would adhere to the Stream Crossing Programmatic conservation measures (NMFS No. 2011/05875) as detailed in the Road Decommissioning section below;
25.	During excessively wet periods, roads may be closed to operations, in order to prevent road damage, soil displacement and/or erosion. The Sale Administrator will make the determination when condition warrant ceasing operations and or haul. This standard also applies to winter haul as well;
26.	When working adjacent to water, i.e. culvert removal or drainage/culvert installation buffer of vegetation, brush barrier, or straw dike would be maintained in order to prevent direct sedimentation to the stream;
27.	Prior to leaving the site, any rutted areas and other damaged areas would be smoothed, sloped and graded to drain, and all erosion control features required would be constructed as functional;
28.	Magnesium Chloride or water will be used for dust abatement on major haul routes in order to increase safety, reduce road surface erosion, and minimize dust and sediment input to streams from log hauling activities;
29.	Dust abatement would be applied the same year that log hauling occurs. Application would follow design criteria in the NPCNF' Programmatic Road Maintenance consultation (1999) which specifies increased application rates may be used to enhance safety or to protect resources;
30.	With the application of Magnesium Chloride, a one-foot no-spray buffer would be applied on the edge of gravel if road width allows. When water is used, any water pumping sites would be approved by a fisheries biologist or hydrologist. The equipment used to remove water from the stream would meet NMFS screening criteria (NMFS 2011);
31.	Guidelines found in NMFS' Anadromous Salmonid Passage Facility Design (NMFS 2011a) will be utilized for all water pumping activities associated with dust abatement and fire safety. A fisheries biologist will inspect all pumping locations;
<u>Road Decommissioning</u>	

32.	<p>Road decommissioning or culvert replacements would adhere to the Stream Crossing Programmatic conservation measures (NMFS No. 2011/05875).</p> <p>Measures to prevent damaging levels of sediment from entering streams would be undertaken during road decommissioning or culvert replacements. Measures may include:</p> <ul style="list-style-type: none"> ○ installing temporary crossings over live streams if needed in order to access roads to be decommissioned ○ placing removable sediment traps below work areas to trap fines ○ when working instream, removing all fill around pipes prior to bypass and pipe removal; ○ revegetating scarified and disturbed soils with weed free grasses for short-term erosion protection and with shrubs and trees for long-term soil stability; ○ utilizing erosion control mats on stream channel slopes and slides; and ○ mulching with native material, where available, or using weed-free straw to ensure coverage of exposed soils; Re-contouring of stream channels would match the plan and profile of the stream above and below the road.
<u>Equipment Fuel/Oil</u>	
33.	Refueling of heavy equipment and fuel storage would occur outside of RHCA's. Fueling of logging trucks would occur in town/cities and not in the project area;
34.	If Purchaser maintains storage facilities for oil or oil products on Sale Area, Purchaser shall take appropriate preventive measures to ensure that any spill of such oil or oil products does not enter any stream or other waters of the United States or any of the individual States;
35.	If the total oil or oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, Purchaser shall prepare a Spill Prevention Control and Countermeasures Plan. Such plan shall meet applicable EPA requirements (40 CFR 112), including certification by a registered professional engineer;
36.	Purchaser shall notify Contracting Officer and appropriate agencies of all reportable (40 CFR 110) spills of oil or oil products on or in the vicinity of Sale Area that are caused by Purchaser's employees agents, contractors, Subcontractors, or their employees or agents, directly or indirectly, as a result of Purchaser's Operations. Purchaser will take whatever initial action may be safely accomplished to contain all spills;
37.	Gas cans (5 gallons) used for fueling chainsaws will also be stored and transported in pick-up trucks. In the event of on-site fuel storage, the provisions of the sanitation and servicing portion of the contract will be followed to minimize the risk of a fuel spill;
38.	Contract specifications included but are not limited to maintaining all equipment operating in the contract area in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid and contractors would be responsible for cleanup of any spill resulting in pollution of soil or water;
39.	For instream culvert work, all equipment used in the stream and in riparian areas will be cleaned of external oil, grease, dirt, and mud, and be free of abnormal leaks prior to arriving at the project site and contractors will have spill prevention and containment materials on site.